

Application Serial No. 10/713,329
Response Dated October 13, 2005
Reply to Restriction dated September 27, 2005

Amendments to the claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Original) A method of forming a structure, comprising the steps of:
ink-jet printing a first layer;
ink-jet printing a first sacrificial layer above at least part of the first layer;
ink-jet printing a second layer above at least part of the first sacrificial layer; and
removing the first sacrificial layer to create at least one first open space within the structure.
2. (Original) The method of claim 1 further comprising the step of ink-jet printing a first electrode layer prior to ink-jet printing the first sacrificial layer, wherein the first sacrificial layer extends above at least part of the first electrode layer.
3. (Original) The method of claim 2 further comprising the step of ink-jet printing a first dielectric layer above the first electrode layer prior to ink-jet printing the first sacrificial layer, wherein the first sacrificial layer extends above at least part of the first dielectric layer.
4. (Original) The method of claim 3 further comprising the step of ink-jet

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printing a second dielectric layer above the first sacrificial layer prior to ink-jet printing the second layer, wherein the second dielectric layer extends above at least part of the first sacrificial layer.

5. (Original) The method of claim 4 further comprising the step of ink-jet printing a second electrode layer above the second dielectric layer prior to ink-jet printing the second layer, wherein the second electrode layer extends above at least part of the second dielectric layer.

6. (Original) The method of claim 1 wherein the first layer and the second layer are flexible.

7. (Original) The method of claim 1 wherein the first sacrificial layer is a patterned layer having first sacrificial layer regions, wherein the first sacrificial layer regions are spaced by gaps and the first layer is secured to the second layer in the gaps.

8. (Original) The method of claim 5 further comprising the steps of:
ink-jet printing a second sacrificial layer above at least part of the second layer, ink-jet printing a third layer above at least part of the second sacrificial layer; and
removing the second sacrificial layer to create at least one second open space within the

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structure.

9. (Original) The method of claim 8 further comprising the step of ink-jet printing a third electrode layer prior to ink-jet printing the second sacrificial layer, wherein the second sacrificial layer extends above at least part of the third electrode layer.

10. (Original) The method of claim 9 further comprising the step of ink-jet printing a third dielectric layer above the third electrode layer prior to ink-jet printing the second sacrificial layer, wherein the second sacrificial layer extends above at least part of the third dielectric layer.

11. (Original) The method of claim 10 further comprising the step of ink-jet printing a fourth dielectric layer above the second sacrificial layer prior to ink-jet printing the third layer, wherein the fourth dielectric layer extends above at least part of the second sacrificial layer.

12. (Original) The method of claim 11 further comprising the step of ink-jet printing a fourth electrode layer above the fourth dielectric layer prior to ink-jet printing the third layer, wherein the fourth electrode layer extends above at least part of the fourth dielectric layer.

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13. (Original) The method of claim 8 wherein the third layer is flexible.
14. (Original) The method of claim 8 wherein the second sacrificial layer is a patterned layer having second sacrificial layer regions, wherein the second sacrificial layer regions are spaced by gaps and the third layer is secured to the second layer in the gaps.
15. (Original) The method of claim 14 wherein the gaps between the second sacrificial layer regions are offset relative to the gaps in the first sacrificial layer regions.
16. (Original) The method of claim 8 wherein the first sacrificial layer and the second sacrificial layer are removed at the same time.
17. (Original) The method of claim 16 further comprising the step of providing through holes that intersect the first sacrificial layer and the second sacrificial layer prior to removing the first sacrificial layer and the second sacrificial layer.
18. (Original) The method of claim 1 wherein the structure is an electrostatic actuator.
19. (Withdrawn) A method of forming an electrostatic actuator comprising:

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providing a first flexible member having a first electrode adjacent a dielectric;
providing a second flexible member having a second electrode adjacent a dielectric;
wherein the first flexible member and the second flexible member are configured and
connected together to define a chamber having an open state and a closed state; and
providing a sensor adjacent the first flexible member and/or the second flexible member
to provide an indication of whether the chamber is in the open state or the closed state.

20. (Withdrawn) The method of claim 19 wherein the sensor is a FET.
21. (Withdrawn) The method of claim 19 wherein the sensor is a capacitor.
22. (Withdrawn) The method of claim 19 wherein the sensor is a relay.
23. (Withdrawn) The method of claim 19 wherein the sensor is a piezoelectric
element.
24. (Withdrawn) The method of claim 19 wherein the first sensor is a piezoresistive
element.
25. (Withdrawn) The method of claim 19 wherein at least part of the sensor is ink-

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jet printed.

26. (Withdrawn) A method for forming an electrostatic actuator that includes a flexible structure having a number of electrodes, wherein the flexible structure is adapted to be expanded to create a number of open spaces within the flexible structure, wherein the number of electrodes are disposed so that, when the flexible structure is expanded, pairs of electrodes are separated by the open spaces, the method comprising the step of ink-jet printing at least part of the flexible structure.

27. (Withdrawn) The method of claim 26 comprising the step of ink-jet printing the electrodes.

28. (Withdrawn) The method of claim 26 wherein the flexible structure includes flexible layers that support the number of electrodes, the method comprising the step of ink-jet printing the flexible layers.

29. (Withdrawn) A method of forming vertically stacked devices, the method comprising the steps of:

ink-jet printing a first device;

ink-jet printing a second device above the first device.

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30. (Withdrawn) A method according to claim 29, wherein the first device and the second device require electrical signals, the method further comprising the steps of:

ink-jet printing one or more conductive traces that electrically connect to the first device for transmitting and/or receiving electrical signals to/from the first device.

31. (Withdrawn) A method according to claim 30 further comprising the steps of:

ink-jet printing one or more conductive traces that electrically connect to the second device for transmitting and/or receiving electrical signals to/from the second device.

32. (Withdrawn) A method for forming at least part of a microstructure, wherein the microstructure includes two or more materials, the method comprising:

ink-jet printing the first material and ink-jet printing the second material simultaneously with different ink-jet heads.

33. (Withdrawn) The method of claim 32 wherein the first material is ink-jet printed in a first region, and the second material is simultaneously ink-jet printed in a second region, wherein the first region does not overlap or significantly overlap the second region.